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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,188	03/29/2004	Wei Xiao	MSFT-2947/307245.01	3360

41505 7590 03/08/2006

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EXAMINER

ALAM, SHAHID AL

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,188

Applicant(s)

XIAO, WEI

Examiner

Shahid Al Alam

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 6-10, 14-16 and 19-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-13, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03292004; 12192005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 25 are pending in this Office action.

Election/Restrictions

2. This application contains claims directed to the following patentably distinct species that are independent or distinct because of the reasons given below:

SPECIES I: Claims 1 – 5, 11 – 13 and 17 – 18, drawn to querying a database during database recovery including permitting a snapshot query of the database concurrent with the removal of an incomplete transaction.

SPECIES II: Claims 6 – 7, 19 – 20 and 24, drawn to querying a database during database recovery using a snapshot of the database including testing for a commit time related to a data item corresponding to the new query.

SPECIES III: Claims 8 – 10, 14 – 16, 21 – 23 and 25, drawn to querying a database during recovery of the database and including testing for a commit time related to a data item corresponding to the new query.

3. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there is no generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

During a telephone conversation with Jerome G. Schaefer, Reg. No. 50,800 on February 28, 2006 a provisional election was made with traverse to prosecute the invention of Species I, claims 1 – 5, 11 – 13 and 17 - 18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6 – 10, 14 – 16 and 19 – 25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on March 29, 2004 and December 19, 2005 were filed before the mailing date of the first Office action. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

5. Claim 1 is objected to because of the following informalities:

Claim 1, line 4, at the end of the incomplete transaction, there is a period (".") instead of a semi-colon (";").

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17 – 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The computer readable medium as recited in the claims can be a storage medium as well as a transmission medium as described in applicant's disclosure, paragraphs [0038 and 0041]. These particular sections in the disclosure refer to "communication media." Claim 17, and other claims that depend in it, are not patent eligible because the invention recited therein is not tangibly incorporated in a computer readable medium.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 5, 11 – 13 and 17 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Efficient Transparent Application Recovery In Client-Server Information Systems by David Lomet et al. in view of U.S. Patent Number 5,752,026 issued to Paul Fortier.

With respect to claim 1, Lomet teaches a method of querying a database during database recovery (see abstract), comprising:

reading a log file containing log file transactions to find incomplete transactions (please see page 466, paragraph 2a and 2b; Log physical read operation that record the values read by database reads. . . . Log logical read operations . . .);

comparing the log file transactions with transactions reflected in the database to find unentered transactions (compared to using transactional persistent queues between the client and the server; see page 462, left column, paragraph 3 and 4; further see page 466, paragraph 1 of *Logging for incomplete requests*);

inserting the unentered transactions into the database (see page 466, paragraph 1 of *Logging for incomplete requests*);

asserting a first lock type on a data item associated with each incomplete transaction (see page 466, second paragraph, "to force a reply message, the server fails flushes its log buffer in a single atomic write to the log. . . . and paragraph 1 of *Logging for incomplete requests*);

removing a transaction reflected in the database if the transaction is not committed in the log file, wherein the removal of the transaction de-asserts a first lock type on a data item associated with the incomplete transaction (see pages 462 - 463, paragraph 2.1); and

permitting a query of the database concurrent with the removal of an incomplete transaction, wherein if a first lock type is detected on a first data item, the query is delayed until the first lock type is de-asserted (see pages 462 - 463, paragraph 2.1).

Lomet does not explicitly teach a snapshot query of the database concurrent as claimed.

Fortier teaches claimed snapshot query of the database (see abstract, column 2, line 66 - column 3, line 1; column 5, lines 5 - 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine the teaching of Fortier with the teachings of Lomet to provide an early database commit while increasing database concurrency and limiting cascading aborts to minimize the impact on recovery for a decomposed database and transaction system.

As to claim 2, the step of asserting a first lock type comprises asserting at least one of a row, a page, a table and an index (see page 466, second paragraph, "to force a reply message, the server fails flushes its log buffer in a single atomic write to the log. . . . and paragraph 1 of *Logging for incomplete requests* and see also pages 462 - 463, paragraph 2.1).

As to claim 3, the step of asserting a first lock type comprises asserting a redo lock (see page 463, paragraph 2.3, Redo database updates).

As to claim 4, permitting a snapshot query of the database concurrent with the removal of an incomplete transaction, wherein if a second lock type is detected on a second transaction, a read from a previous version of the second transaction is performed (see Lomet: pages 462 - 463, paragraph 2.1 and Fortier: abstract, column 2, line 66 - column 3, line 1; column 5, lines 5 - 48).

As to claim 5, the second lock type comprises one of a read and a write lock (please see page 466, paragraph 2a and 2b; Log physical read operation that record the values read by database reads. . . Log logical read operations . .).

Claims 11 – 13 are essentially the same as claims 1 – 5 above except that it set forth the claimed invention as a system rather than a method and rejected for the same reasons as applied hereinabove.


Claims 17 – 18 are essentially the same as claims 1 – 5 above except that it set forth the claimed invention as a computer readable storage medium rather than a method and rejected for the same reasons as applied hereinabove.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shahid Al Alam
Primary Examiner
Art Unit 2162

March 1, 2005